# Looking, and looking, for work

*Vincent Dubé and Claude Dionne*

**In addition to providing an income,** having a job is usually satisfying and rewarding. It also expands one's sphere of activity and in some cases is accompanied by social status. Long-term unemployment can be particularly hard because of its increased risk of financial or psychological consequences. From a public policy standpoint, then, having a clearer picture of the factors associated with long periods of unemployment is vital.

It is well-known that the time spent in unemployment during a year is not evenly distributed across the labour force. A large portion is concentrated within groups of people who look for work over long periods. A recent article shows that the groups most likely to be affected by prolonged unemployment were men, older workers, the less educated, and residents of Quebec and British Columbia (Dubé 2004).

Using a duration model based on a longitudinal sample from the Survey of Labour and Income Dynamics (SLID), this article investigates the factors influencing the chances[1] of finding a job for people who were unemployed for more than six consecutive months[2] in the late 1990s and early 2000s (see *Data source*).

A long-term unemployed person's chances of getting a job were notably influenced by several factors (Table).[5] Results for the short-term jobless (six months or less) and all unemployed (all durations combined) are included for comparison.[6]

## Persons with less chance of finding a job

### *Older workers*

Age had a significant effect on a long-term jobless person's chances of finding work. The youngest unemployed workers (aged 16 to 25) were 35% more likely to find a job than those aged 26 to 45 (reference group). Conversely, the oldest unemployed (56 and over) were 39% less likely to find a job. These results echo the findings of a number of other Canadian studies showing that older workers have difficulty finding employment (Corak 1990; Crémieux et al. 1995; Wong, Henson and Roy 1999). Among the reasons often cited are possible discrimination and a preference by employers to train younger workers as an investment in the future.

### *Social assistance beneficiaries*

Long-term unemployed workers receiving social assistance benefits were 47% less likely to find work. While it may be tempting to attribute this to the program's existence, the relationship is by no means certain. In fact, the assurance of having a small income may make the unemployed more effective in their job search. Among other things, it allows them to dress appropriately, travel to job interviews, or move to where jobs are available. The divergence is better attributed to differences in personal characteristics between those who received social assistance and those who did not. Social assistance recipients may also have weaker ties to the labour market—that is, less optimism about their chances of finding a job, or fewer connections in the workplace.

Moreover, since program eligibility is associated with a person's financial situation, the longer the time between becoming unemployed and applying for social assistance, the longer the transition to employment is likely to be. Also, to avoid being penalized by the social assistance program, the jobless may be less likely to look for temporary or part-time employment, or to officially report it.

### *Immigrants*

Immigrants were 21% less likely to find employment. This is consistent with the perception that they experience greater difficulty in their job search. According to the Longitudinal Survey of Immigrants to Canada (2003), the main obstacles reported were lack of

*Vincent Dubé is with the Transportation Division. He can be reached at 951-7031. Claude Dionne is with Culture, Tourism and the Centre for Education Statistics Division. He can be reached at (613) 951-5043 or both at perspectives@statcan.ca.*

## Data source

The **Survey of Labour and Income Dynamics** provides longitudinal data on labour force activity for each month in a given year. Each January, information for the previous year is collected from some 70,000 people (35,000 per panel). Respondents remain in the survey for six years.

Estimates were weighted to make them representative of the Canadian population (excluding people living in the territories, on Indian reserves, on military bases or in institutions). Two samples were used. One was made up of respondents from January 1996 to December 1998, the other of respondents from January 1999 to December 2001.

The sample of long-term unemployed workers was formed using the first long-term unemployment spell. Analysis is based on unemployed workers and not the periods of unemployment. Hence, if a person had more than one unemployment spell during the observation period, only the first was used. Because it was impossible to obtain a precise measurement of the length of an unemployment spell already in progress when a person joined the sample (that is, before January 1996 for the first group and before January 1999 for the second group), such spells were excluded (left-censored). Students were removed from the sample because of their weaker attachment to the labour force.

The table below provides an overview of the final sample used in the model. A total of 2,538 individuals (unweighted figure) experienced an unemployment spell of seven months or more during the three-year observation period. Of that number, 1,536 were from the first panel and 1,002 from the second panel.

### Model used

A proportional hazard model (Cox partial likelihood method) was used to identify factors that might affect the distribution of unemployment spell durations. The model is based on a job search approach using a risk function, that is, the conditional chances that a person will find a job.[3]

The main advantage of this kind of model is that it takes into consideration the effect that the duration of the unemployment period has on the chances of exiting unemployment and takes right-censored values (that is, unemployment periods that continue beyond the end of the observation period) into account. Within the framework of this specification, the proportional effect that each variable has on the chances is estimated. Information in the table on the next page can be interpreted as the percentage change in the chances of finding a job for a unit variation in a given independent variable (explanatory variables).[4]

**Final sample**

| | All unemployed | | | | Long-term unemployed | | | |
|---|---|---|---|---|---|---|---|---|
| | Sample* | Population** | | Average duration† | Sample* | Population** | | Average duration† |
| | | '000 | % | months | | '000 | % | months |
| **Total** | **7,544** | **3,051** | **100.0** | **5.6** | **2,538** | **1,016** | **100.0** | **11.5** |
| 1996 to 1998 | 4,317 | 1,701 | 55.7 | 5.8 | 1,536 | 600 | 59.0 | 11.7 |
| 1999 to 2001 | 3,227 | 1,350 | 44.3 | 5.2 | 1,002 | 416 | 40.9 | 11.2 |

** Unweighted figures.*
*** Figures weighted to represent the Canadian population.*
*† Average duration of unemployment for those who found a job during the observation period.*

experience in the Canadian labour market, difficulty in having foreign qualifications recognized, and lack of knowledge of either official language.

However, being an immigrant was not a factor for the short-term jobless. This may indicate a division among immigrants based on length of time in Canada. New immigrants may be among the long-term unemployed, with short-term unemployment more common among immigrants who have been living here for some time. The latter may have acquired labour market characteristics closer to those of the workforce as a whole.[7]

## Persons with more chance of finding work

### *Employment Insurance recipients*

The long-term jobless receiving Employment Insurance (EI) benefits had a 21% better chance of finding work than those not receiving benefits. The opposite was true for the short-term jobless and the entire unemployed group (which is heavily influenced by short-term unemployment).

**Table: Factors associated with the chances of finding a job**

| | Short-term unemployed | Long-term unemployed | All unemployed |
|---|---|---|---|
| | | % | |
| **Age** | | | |
| 16 to 25 | 27 | 35 | 30 |
| 26 to 45 (reference group) | 0 | 0 | 0 |
| 46 to 55 | -16 | n.s. | -15 |
| 56 and over | -48 | -39 | -46 |
| Disability | -30 | n.s. | -25 |
| EI benefits | -18 | 21 | -12 |
| Social assistance benefits | -40 | -47 | -45 |
| Principal household earner | 14 | 16 | 15 |
| Urban area* | n.s. | n.s. | n.s. |
| Immigrant | n.s. | -21†† | -15 |
| Visible minority or Aboriginal | -15 | n.s. | -15 |
| Woman | -13 | n.s. | -9 |
| Experience** | 24 | n.s. | 22 |
| **Education** | | | |
| Less than high school | n.s. | n.s. | n.s. |
| High school diploma (reference group) | 0 | 0 | 0 |
| Postsecondary, non-university | 13 | n.s. | n.s. |
| University degree | 27 | n.s. | 20 |
| Presence of children | n.s. | n.s. | n.s. |
| Couple | n.s. | n.s. | n.s. |
| **Region** | | | |
| Atlantic | n.s. | n.s. | n.s. |
| Quebec | n.s. | n.s. | -11 |
| Ontario (reference group) | 0 | 0 | 0 |
| Prairies | 13 | 35 | 20 |
| British Columbia | n.s. | n.s. | n.s. |
| Panel 2 (1999 to 2001)† | n.s. | n.s. | n.s. |

*Source: Survey of Labour and Income Dynamics, 1996 to 2001*
* *50,000 or more.*
** *Two or more years labour market experience.*
† *Panel 1 is the reference group.*
†† *This result is statistically significant at the 90% level, while other results are significant at the 95% level; n.s. = not significant.*

*The model does not refer to six consecutive years, but instead to two longitudinal panels of three years each that have been combined: Panel 1: 1996 to 1998; panel 2: 1999 to 2001.*

As results indicate, the overall effect of EI on unemployment duration is difficult to interpret, largely because different factors may be acting in concert or at cross-purposes.

In particular, many of the short-term jobless are unemployed for a very short period (less than two months), making it not worthwhile to apply for EI. This may partly explain why people not receiving benefits had a greater chance of finding a job. Similarly, unemployed workers may tend to be from sectors with high turnover and more temporary jobs, so accumulating the hours required for EI eligibility may be more difficult.

The effect of EI on the chance of finding a job varies according to how long a person has been receiving benefits. For example, those who have been unemployed for only a few months and have just started receiving benefits may be less inclined to look for work than those whose benefits are running out.

In addition, because a person must accumulate a minimum number of work hours to be eligible for EI, recipients may have stronger ties to the labour market, making the job search easier. One reason this phenomenon is seen only with long-term unemployment could be that this group largely excludes seasonal unemployment and temporary jobs, which given their importance could bias the program's effects.

### *Primary breadwinners*

Being the primary earner in a household increased a long-term unemployed person's chances of finding a job by nearly 16%. People in this situation likely have more financial responsibilities and so are under more pressure to get a job.

### *Prairie residents*

The long-term jobless in the Prairie region were 35% more likely to find employment than those living

in Ontario (reference group). This is consistent with various labour market indicators for the period. For example, the Prairie region had the lowest unemployment rates and the lowest frequency of long-term unemployment in 2001 (figures not shown).[8]

## Factors among short-term unemployed

Almost all factors observed for the long-term unemployed were also observed for short-term unemployed. However additional factors influenced the latter's chances of finding a job.

The leading one was education level. People with a postsecondary, non-university education were 13% more likely to find a job than those with only a high school education (reference group); the percentage was 27% for those with a university education. This agrees with the idea that increasing human capital should boost the chances of finding work since, among other things, employers will assume a greater potential for productivity. One reason this factor is absent among the long-term unemployed is that those with higher education are more often concentrated in specific subject areas, making them less in demand in the labour market. It is also possible that they have higher expectations, which could reduce the chance of finding a job quickly.

Experience was another positive factor. People with at least two years' experience in the labour market had about a 24% better chance of finding employment. A work record may help lessen an employer's feeling of risk in hiring.

The presence of a disability also had an effect, in this case negative. Those with a disability were 30% less likely to find a job than those with no disabilities. This factor may tend to reduce available job offers (because of work limitations or hiring discrimination) and to make looking for work more difficult in the short term.

Finally, as employment equity programs show, women, visible minorities and Aboriginals had less chance of finding work than others in the short-term unemployed population. For example, unemployed women were 13% less likely to get a job, while Aboriginal persons and members of visible minorities were 15% less likely.[9]

## Conclusion

Several factors influenced the chances of long-term unemployed workers finding a job in the late 1990s and early 2000s. Those who were older or receiving social assistance had less chance of finding work. Conversely, chances were better for younger people, primary household maintainers, those receiving EI benefits, and those living in the Prairie region.

Perspectives

### Notes

1 The appropriate technical term in the case of a proportional risk approach is the 'risk' of finding a job. However, to avoid any negative connotation, 'chance' is used in the article.

2 No real consensus exists in the literature on a definition of long-term unemployment. It is defined here as a period of more than six consecutive months to avoid potential distortions associated with frictional and seasonal unemployment. It also keeps the sample to a reasonable size—one preferable for econometric modelling. Moreover, this group of unemployed is of particular interest since their job search is likely a 'dominant' activity. For example, it would be rather odd for a person to spend more than six months looking for a job and then keep it for only two or three weeks.

3 This model can be expressed in the following form:

$$h_i(t) = \lambda_0(t)e^{(\beta_1 x_{i1}+\ldots+\beta_k x_{ik})}$$

This function represents the chances an unemployed person $i$ has of finding a job within time $t$. The hazard function is composed of two terms multiplied together: the reference risk, that is, the chances common to all individuals, and a linear function of $k$ explanatory variables $x_j$ associated with the estimated $\beta$ coefficients as an exponential. In other words, the model establishes that the individual chances are the product of a common component and a component for each individual.

The Cox model is referred to as a proportional risk model because the ratios of the risk functions of two persons, $i$ and $j$, are used:

$$\frac{h_i(t)}{h_j(t)} = \frac{\lambda_0(t)\, e^{(\beta_1 x_{i1}+\ldots+\beta_k x_{ik})}}{\lambda_0(t)\, e^{(\beta_1 x_{j1}+\ldots+\beta_k x_{jk})}}$$

*or*

$$\frac{h_i(t)}{h_j(t)} = e^{[\beta_1(x_{i1}-x_{j1})+\ldots+\beta_k(x_{ik}-x_{jk})]}$$

So the two $\lambda_0(t)$ components cancel out, which eliminates the need to specify the shape of the risk curve. For more information on duration analysis, see Devine and Kiefer (1991). For more details on the Cox model, see Allison (1995).

4 More precisely, this chance is derived through the following equation:

$$Chance=(e^{\beta}-1)\bullet 100$$

5 The small number of significant factors in the long-term unemployed population may reflect the complexity and ambiguity of their interrelation in the labour market. For example, since the duration model measures the overall chances of finding a job, some factors may have specific divergent effects. If that is the case, the effects will cancel out, and no difference will be observed overall.

6 The sample for long-term unemployment is not the same as for short-term or total unemployment. The long-term sample is made up of a person's first long-term unemployment spell, whereas the sample for short-term and total unemployment uses the first unemployment spell, regardless of its length (see *Data source*).

7 Palameta (2004) showed that new immigrants were two to three times more likely than non-immigrants to have low incomes, whereas most medium-term and long-term immigrants were no more likely than non-immigrants to have low incomes. This suggests that after a period of adjustment, immigrants integrate reasonably well into the Canadian economy.

8 The frequency of long-term unemployment is the ratio of long-term unemployed workers to all unemployed workers.

9 Because of the small sample, the two groups were combined.

## ■ References


Allison, Paul D. 1995. *Survival analysis using the SAS system: A practical guide.* Cary, N.C.: SAS Institute.

Corak, Miles R. 1990. *The duration of unemployment and the dynamics of labour sector adjustment: Parametric evidence from the Canadian annual work patterns survey, 1978-80, 1982-1985.* Ottawa: Economic Council of Canada.

Crémieux, Pierre-Yves, Pierre Fortin, Paul Storer and Marc Van Audenrode. 1995. *The impact of Unemployment Insurance on wages, search intensity, and the probability of re-employment.* Ottawa. Human Resources Development Canada.

Devine, Theresa J., and Nicolas M. Kiefer. 1991. *Empirical Labor Economics.* New York: Oxford University Press.

Dubé, Vincent. 2004. "Sidelined in the labour market." *Perspectives on Labour and Income* (Statistics Canada catalogue no. 75-001-XIE). April 2004 online edition.

Palameta, Boris. 2004. "Low income among immigrants and visible minorities." *Perspectives on Labour and Income* (Statistics Canada catalogue no. 75-001-XIE). April 2004 online edition.

Wong, Ging, Harold Henson and Arun Roy. 1999. *Long-term unemployment, worker profiling and program evaluation issues.* Ottawa: Evaluation and Data Development, Human Resources Development Canada.